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HYDROLOGICAL MEMORANDUM 18

RAINFALL OVER THE AREA OF THE LINCOLNSHIRE, WELLAND AND NENE RIVER BOARDS 1916—50

by

Miss H. Rowsell

Hydrometeorological Services (Met.O.8)

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HYDROLOGICAL MEMORANDA NO. 18

Rainfall over the area of the Lincolnshire, Welland and Nene River Boards 1916-1950

1. Rainfall, 1916-1950;

1.1. Introduction. The estimation of standard-period averages for the months or for the year, is carried out in three stages; the selection of sound, homogeneous records complete for the 35 years, 1916-1950, which provide arithmetic means of monthly and annual rainfall, the basic values for all other work; the estimation of standard-period, annual averages for short-period stations; the estimation of standard-period, monthly averages for stations in the second group, where these are needed for special purposes.

A detailed account of the methods developed and used in the Meteorological Office (M.O.3) to estimate standard-period averages for short-period records, is given in Hydrological Memoranda No 5.

It is possible to process the data in a number of ways but the maps and tables are presented here in the simplest, most precise forms in order to be of use to a wide range of enquirers.

1.2. The Primary Survey, for Great Britain and Northern Ireland, of stations with complete records during 1916-1950, included some cases where the site had been changed to one with a better exposure and observations from both sites had been recorded for a few years. Attempts were made to amend the earlier readings by comparison of the data during a period of overlap, in order to have a set of values from 1916 to the date of the change, which would be representive of the later, and better, record. But since the earlier exposures were usually unsatisfactory (being over-exposed or over-sheltered), the results were mostly erratic and the amended sets of values were not homogeneous. In a few cases, small breaks in a long record were completed by using estimated values, based on a nearby station, with or without the use of modifying factor.

Of the many records examined, monthly and annual averages were accepted for 21 stations, 12 for Lincolnshire, 2 for the Welland and 7 for the Nene River Board. The accepted values (in inches), together with the proportions (per cent) of each monthly average to the annual average, are given in Table 1 together with the altitude and the National Grid reference for each station. Most of these averages were included in H.M.S.O. publication, M.O.635, "Averages of Rainfall for Great Britain and Northern Ireland, 1916-1950", some were omitted because other stations were so near.

The percentage proportion of monthly averages to the annual averages for the long-period stations were used to draw a series of twelve monthly maps from which it is possible to estimate the percentage of average annual rainfall, for any place, for each month of the year. These maps are shown as Figure 1. Values estimated for a few points between the isopercental lines have been added to give a clearer indication of the variations from place to place. The points chosen are not necessarily the same for each map.

1.3. The Secondary Survey of short-period stations was undertaken next, using records up to the time of the survey, usually into the late 1950's. Long-period stations, whose averages had been rejected from the Primary

Survey because the record was not homogeneous, were examined again and averages were estimated for the later (and usually improved) part of the series of observations. Averages based on data for less than 5 years were not usually accepted for publication. A list of the accepted averages, for the short-period stations, is given in Table II together with the altitude and National Grid reference for each. The stations are listed in an order based on natural drainage areas which will be used for the first time in British Rainfall, 1961.

These averages, together with the long-period averages listed in Table I, were plotted on Ordnance Survey Maps (scale 4 miles to the inch), and used to draw the lines of average annual rainfall, 1916-1950. The map is shown as Figure 2. The Secondary Survey is frequently revised for special areas using the most up-to-date observations for relatively new stations and the map is subject to revision from time to time. The redrawing of the isohyets usually results in greater detail and perhaps a clearer definition of a wet area as more and more observations become available from improved River Board networks of rain-gauges. Drastic changes are not expected. In Tables I, II and III, with a few exceptions, the average quoted are for records still being maintained in 1963.

1.4. Monthly Averages for a further group of stations were next estimated for use in the Monthly Weather Report and for enquiries. For this purpose some stations were chosen from those listed in Table II to supplement those listed in Table I. To find the monthly averages, the monthly proportions (per cent of annual average) were chosen from the equipercental maps (see Fig 1) so that the total for the twelve months was 100. These monthly percentages were then used to apportion the annual average (in inches) amongst the months. The results are given in Table III.

1.5. Daily Rainfall, 1916-1950. Two of the initial 21 records which were accepted for the Primary Survey (1.2.) were analysed further. These records had regular daily entries, for the 24-hour period 0900 to 0900, for each of the 35 years, 1916-1950. Table IVa gives for each of the stations, the 35-year totals for each day of the year (in inches). Table IVB gives 1/35 of all possible totals from .17 in. to 24.67 in., thus providing a reduction table for the values in IVa to give average daily falls from "trace" to .70 in. For 29 February the reduction factor is, of course, 1/9. The Sandringham data from just outside the area, have also included.

These daily averages can be re-grouped as 5-day means, 7-day means, consecutive or sliding means or in whatever form suits a specific requirement.

2. Frequencies of Daily Rainfall, 1916-1950. The same set of daily values used for Table IVa were re-grouped to give frequency tables with intervals of 01. inch. These have been re-arranged in Table V, to give accumulated frequencies with intervals of .10 in. up to 2.50 in. and a wider grouping above this.

3. Extremes of Rainfall. The records for the 35-year period, 1916-1950, for the stations used in Table IV and V were also used to find maximum and minimum values for the year and for each month and also maximum daily values for each month. These maxima and minima are given in Table VI and Table VII. Additional extremes are given in these tables to cover the 50-year period, 1911-1960.

Appendix I.

Intense Falls. Falls of 2 hours or less, which have been recorded in British Rainfall and rank as "noteworth", "remarkable" or "very rare", are listed in Appendix I.

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TABLE I Monthly and Annual Averages of Rainfall, 1916-1950, (in inches)
Lincolnshire, Nene and Welland River Board Areas

County	Station	Alt ft	N.G.R.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year	
							Lincolnshire River Board										
Lincolnshire	Brigg, Wrawby Rd	22	TA(54)005074	2.28	1.69	1.43	1.71	2.00	1.75	2.46	2.42	1.90	2.23	2.43	2.10	24.40	Inch
				9.3	6.9	5.9	7.0	8.2	7.2	10.1	9.9	7.8	9.1	10.0	8.6	100.0	%
"	Ferriby Sluice	18	SE(44)976211	2.36	1.76	1.42	1.75	1.94	1.68	2.33	2.32	1.87	2.22	2.35	2.11	24.11	Inch
				9.8	7.3	5.9	7.3	8.0	7.0	9.7	9.6	7.8	9.2	9.7	8.7	100.0	%
"	Brocklesby Pk	110	TA(54)140113	2.45	1.95	1.56	1.95	2.10	1.83	2.69	2.54	2.21	2.45	2.64	2.22	26.59	Inch
				9.2	7.3	5.9	7.3	7.9	6.9	10.1	9.6	8.3	9.2	9.9	8.4	100.0	%
"	Cleethorpes	23	TA(54)314079	2.19	1.77	1.48	1.70	1.85	1.61	2.25	2.12	1.86	2.15	2.39	2.04	23.41	Inch
				9.3	7.6	6.3	7.3	7.9	6.9	9.6	9.1	7.9	9.2	10.2	8.7	100.0	%
"	Skegness	15	TF(53)569631	2.09	1.53	1.31	1.60	1.65	1.52	2.22	2.14	1.99	1.99	2.31	2.01	22.36	Inch
				9.3	6.8	5.9	7.2	7.4	6.8	9.9	9.6	8.9	8.9	10.3	9.0	100.0	%
"	Saltersford P. Sta	188	SK(43)926334	2.24	1.82	1.54	1.85	1.92	1.52	2.68	2.44	1.99	2.20	2.46	2.01	24.67	Inch
				9.1	7.4	6.2	7.5	7.8	6.1	10.9	9.9	8.1	8.9	10.0	8.1	100.0	%
"	Skellingthorpe Hall	40	SK(43)930715	2.16	1.68	1.47	1.77	1.89	1.71	2.46	2.38	1.97	2.13	2.41	2.05	24.08	Inch
				9.0	7.0	6.1	7.4	7.8	7.1	10.2	9.9	8.2	8.8	10.0	8.5	100.0	%
"	Hackthorne Hall	105	SK(43)992825	2.13	1.78	1.44	1.74	2.00	1.74	2.44	2.44	2.03	2.18	2.46	2.03	24.41	Inch
				8.7	7.3	5.9	7.1	8.2	7.1	10.0	10.0	8.3	9.0	10.1	8.3	100.0	%
"	Horncastle	135	TF(53)251695	2.37	1.85	1.51	1.80	1.88	1.71	2.68	2.31	2.13	2.45	2.63	2.31	25.63	Inch
				9.2	7.2	5.9	7.0	7.3	6.7	10.5	9.0	8.3	9.6	10.3	9.0	100.0	%
"	Cranwell	205	TF(53)003494	2.08	1.66	1.45	1.67	1.98	1.59	2.52	2.18	1.99	2.17	2.31	1.91	23.51	Inch
				8.8	7.1	6.2	7.1	8.4	6.8	10.7	9.3	8.5	9.2	9.8	8.1	100.0	%
"	Boston, Grand Sluice	17	TF(53)323444	2.15	1.58	1.35	1.59	1.88	1.74	2.43	2.22	1.86	2.16	2.28	1.92	23.16	Inch
				9.3	6.8	5.8	6.9	8.1	7.5	10.5	9.6	8.0	9.3	9.9	8.3	100.0	%
"	Skirbeck, Black Sluice	11	TF(53)325428	2.21	1.62	1.47	1.66	1.90	1.74	2.49	2.29	1.94	2.29	2.43	2.04	24.08	Inch
				9.2	6.7	6.1	6.9	7.9	7.2	10.3	9.5	8.1	9.5	10.1	8.5	100.0	%
							Welland River Board										
Northampton-shire	Etton	36	TF(53)143048	1.84	1.36	1.22	1.57	1.67	1.57	2.02	2.01	1.80	1.92	2.08	1.62	20.68	Inch
				8.9	6.6	5.9	7.6	8.1	7.6	9.8	9.7	8.7	9.3	10.0	7.8	100.0	%
Lincolnshire	Pode Hole	12	TF(53)214219	2.16	1.69	1.46	1.68	1.88	1.69	2.50	2.09	2.03	2.15	2.34	1.98	23.65	Inch
				9.1	7.1	6.2	7.1	8.0	7.1	10.6	8.8	8.6	9.1	9.9	8.4	100.0	%
							Nene River Board										
Northampton-shire	Ravensthorpe	320	SP(42)682704	2.38	1.80	1.59	2.11	1.99	1.74	2.36	2.16	2.15	2.51	2.58	2.10	25.47	Inch
				9.3	7.1	6.2	8.3	7.8	6.8	9.3	8.5	8.4	9.9	10.1	8.3	100.0	%

TABLE I Monthly and Annual Averages of Rainfall, 1916-1950, (in inches) Lincolnshire, Nene and Welland River Board Areas. (Continued).

County	Station	Alt. ft.	N.G.R.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year	
				Nene River Board (continued)													
Northampton-shire	Northampton General Hospital	258	SP(42)762604	2.27 9.2	1.71 6.9	1.55 6.3	1.93 7.8	1.96 8.0	1.63 6.6	2.31 9.4	2.14 8.7	2.16 8.8	2.41 9.8	2.50 10.1	2.08 8.4	24.65 100.0	Inch %
"	Kettering S. Wks.	165	SP(42)894729	2.30 9.4	1.67 6.8	1.54 6.3	1.96 8.0	1.92 7.9	1.56 6.4	2.28 9.3	2.25 9.2	2.02 8.3	2.29 9.4	2.53 10.4	2.10 8.6	24.42 100.0	Inch %
"	Wellingborough, Bushfield W.W.	286	SP(42)876694	2.27 9.3	1.71 7.0	1.51 6.2	1.86 7.7	1.96 8.1	1.57 6.5	2.20 9.0	2.34 9.6	2.14 8.8	2.27 9.3	2.40 9.9	2.08 8.6	24.31 100.0	Inch %
	Wellingborough, Swanspool	187	SP(42)894675	2.29 9.3	1.69 6.9	1.55 6.3	1.90 7.8	2.02 8.2	1.61 6.6	2.24 9.1	2.30 9.4	2.08 8.5	2.30 9.4	2.43 9.9	2.12 8.6	24.53 100.0	Inch %
Cambridge-shire	Clough's Cross	6	TF(53)369094	1.86 8.7	1.35 6.3	1.30 6.1	1.56 7.3	1.69 7.9	1.78 8.3	2.31 10.8	1.89 8.9	1.92 9.0	1.98 9.3	2.05 9.6	1.66 7.8	21.35 100.0	Inch %
Lincolnshire	Tydd	10	TF(53)467181	2.09 8.8	1.52 6.4	1.38 5.8	1.70 7.1	1.87 7.9	1.75 7.4	2.55 10.7	2.18 9.2	2.13 8.9	2.21 9.3	2.40 10.1	2.00 8.4	23.78 100.0	Inch %

TABLE II Estimated Annual Averages of Rainfall (in inches) 1916-1950 for short-period stations. (Lincolnshire, Nene and Welland River Board Areas)

County	Station	Annual Average in.	Alt. ft.	N.G.R.
	Lincolnshire River Board			
Lincolnshire	Normanby	25.50	175	SE(44)883168
"	Brigg, Sugar Factory	24.14	15	SE(44)987061
"	Immingham	23.69	13	TA(54)208149
"	Little Coates, P. Sta.	25.02	14	TA(54)252086
"	Cleethorpes, P. Sta.	22.24	25	TA(54)321071
"	Wold, Newton Manor	27.47	230	TF(53)242970
"	North Cotes	23.66	10	TA(54)349003
"	Grainthorpe	23.15	9	TF(53)382962
"	Manby	22.67	55	TF(53)391869
"	Chapel St. Leonards P. Sta	22.23	10	TF(53)559729
"	Hagworthingham	25.51	205	TF(53)345691
"	Denton	24.20	260	SK(43)866325
"	Lincoln, Brant Rd	23.63	34	SK(43)963666
"	Lincoln	23.76	25	SK(43)962719
"	Dunholme	22.71	100	TF(53)004779
"	Bardney	23.59	17	TF(53)113688
"	Woodhall Spa. Waterworks	23.31	45	TF(53)223617
"	Revesby Res.	26.33	124	TF(53)303634
"	Guthram Gout	22.93	15	TF(53)171225
"	Billingborough	24.16	35	TF(53)112342
"	Culverthorpe Hall	23.76	190	TF(53)022402
"	East Kirkby Manor	25.56	35	TF(53)334618
"	Hakerley Bridge Farm	22.98	10	TF(53)321529
"	Church Road, P. Sta.	23.82	7	TF(53)335435
"	Boston, Frieston Rd.	24.31	16	TF(53)339441
"	Tytton Hall	24.03	10	TF(53)329417
"	Kirton	23.79	12	TF(53)302380
"	Eastville	22.09	3	TF(53)404602
"	Lade Bank Bridge	22.28	13	TF(53)378544
"	Sibsey	23.92	15	TF(53)352522
"	Leverton	22.39	10	TF(53)422484
	Welland River Board			
Leicestershire	Market Harborough, Grammar Sch.	24.33	345	SP(42)729879
"	Market Harborough, Nithsdale Ave.	25.56	285	SP(42)735867
"	Kibworth Harcourt	25.90	408	SP(42)682945
Rutland	Eye Brook Res.	23.73	187	SP(42)855943
"	Seaton Mill	23.53	150	SP(42)908977
"	Ketton	23.70	106	SK(43)984044
"	Oakham School	24.99	350	SK(43)858087
"	Oakham, Catmose	24.68	350	SK(43)863085
Northamptonshire	Peterborough, Dogsthorpe	21.79	45	TF(53)204006
Lincolnshire	Deeping St. Nicholas	22.22	10	TF(53)213157
"	Irnham Hall	24.45	220	TF(53)022265
"	Wilsthorpe	22.23	50	TF(53)081148
"	Holbeach	22.03	10	TF(53)355241

TABLE II Estimated Annual Averages of Rainfall (in inches) 1916-1950 for short-period stations (continued) (Lincolnshire, Nene and Welland River Board Areas)

County	Station	Annual Average in.	Alt. in.	N.G.R
	Nene River Board			
Northamptonshire	Norton Junction	26.52	358	SP(42)602657
"	Litchborough	25.99	485	SP(42)633542
"	Bugbrooke Mill	23.59	228	SP(42)679588
"	Northampton, St Crispin Hosp.	24.59	398	SP(42)712611
"	Blisworth	25.53	296	SP(42)720550
Northamptonshire	Lamport Hall	27.17	480	SP(42)759745
"	Hollowell	25.51	400	SP(42)687722
"	Althorp Park	26.51	400	SP(42)682652
"	Duston	26.16	342	SP(42)717612
"	Northampton Hardingstone	22.95	189	SP(42)762598
"	Northampton, Simpson Ave.	23.88	329	SP(42)768615
"	Little Houghton	23.42	300	SP(42)812591
"	Yardley, Hastings	25.09	332	SP(42)852573
"	Wollaston P. Sta.	22.90	140	SP(42)889641
"	Wellingborough, Nene Wharf	23.07	135	SP(42)899664
"	Desborough	25.12	457	SP(42)798836
"	Kettering, Isham Rd.	26.40	300	SP(42)867783
"	Thorpe Malsor	25.44	350	SP(42)830795
"	Gransley	25.22	275	SP(42)833782
"	Harrowden Hall	24.76	290	SP(42)882709
"	Wellingborough, Redwell Rd.	24.71	290	SP(42)885687
"	Wellingborough Ironworks	23.89	184	SP(42)906693
"	Wellingborough S. Wks.	24.21	150	SP(42)912673
"	Rushden Cemetery	23.00	260	SP(42)965664
"	Raunds	22.78	193	SP(42)991721
"	Oundle, Nene Wharf	23.09	65	TL(52)043888
"	Corby	23.91	319	SP(42)901885
"	Apethorpe	23.88	127	TL(52)022961
"	Wittering	22.96	261	TF(53)048032
"	Bone Mill Waterworks	22.72	183	TF(53)041018
Huntingdonshire	Woadston	21.66	37	TL(52)179975
Northamptonshire	Peterborough, Wesbourne House	21.57	35	TL(52)190975
"	Peterborough S. Wks.	21.38	9	TL(52)201984
Cambridgeshire	Thorney, North House	21.11	11	TF(53)307034
"	Thorney Toll	21.84	4	TF(53)353026
"	Thorney, Nutsgrove Farm	20.82	12	TF(53)328058
"	Tydd Manor	20.72	9	TF(53)429166
Lincolnshire	Weston St. Mary	21.08	10	TF(53)275184
"	Sutton Bridge	22.86	21	TF(53)476200
"	Wingland Grange	20.64	10	TF(53)517220

TABLE III Monthly and Annual Averages of Rainfall, 1916-1950, estimated for a short-period station (in inches).

County	Station	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Northamptonshire	Raunds	2.07	1.48	1.44	1.73	1.94	1.50	2.19	2.10	2.07	2.05	2.30	1.91	22.78

TABLE IVa 35-year totals of daily rainfall, (in inches) 1916-50.

Cranwell

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	3.93	1.52	1.35	2.30	1.53	2.24	2.05	2.25	2.48	1.63	4.44	1.13
2	2.29	2.81	1.43	2.77	1.37	2.06	2.51	3.22	2.10	0.75	2.85	2.48
3	2.29	2.99	0.67	3.12	1.34	1.83	2.37	2.09	3.36	3.68	2.32	1.32
4	1.55	1.73	2.23	2.72	2.07	1.26	1.54	2.11	2.30	1.85	2.59	2.44
5	1.55	2.11	0.92	1.71	3.03	1.88	2.90	3.53	1.49	1.79	2.99	2.23
6	2.16	1.50	1.19	1.49	2.53	1.88	2.34	3.64	1.59	1.80	2.39	1.30
7	2.44	2.14	2.24	2.18	1.55	1.06	2.33	1.87	1.13	1.88	3.01	1.20
8	1.51	1.80	1.15	1.42	1.10	1.74	1.67	4.98	1.24	2.81	1.93	2.57
9	3.05	2.12	1.74	2.11	1.04	1.30	3.05	2.27	1.54	3.37	2.22	2.12
10	2.47	2.04	1.84	1.75	1.58	1.62	3.66	2.72	2.47	2.10	1.44	1.14
11	2.30	1.61	2.23	1.67	2.45	1.39	6.42	4.06	1.61	2.35	3.66	1.98
12	2.20	2.33	2.23	1.28	1.98	2.74	3.38	2.29	2.93	2.41	1.16	0.85
13	1.63	1.27	1.13	1.56	1.18	3.87	4.18	1.23	2.42	1.10	2.51	1.71
14	2.80	1.00	1.89	1.82	1.37	3.31	3.25	1.53	4.56	1.93	2.82	3.12
15	1.66	1.17	2.83	1.85	1.70	1.48	7.02	1.01	2.45	1.49	2.92	1.29
16	1.36	3.05	1.57	2.18	2.20	1.71	3.04	1.23	0.97	1.74	2.68	2.09
17	1.42	2.14	2.37	3.96	3.61	0.92	2.62	0.74	2.18	3.41	3.05	0.94
18	3.03	1.68	0.80	1.66	3.82	2.47	4.86	1.69	1.58	1.78	5.90	1.10
19	2.52	2.30	2.07	1.70	3.03	3.02	2.05	2.48	4.24	2.25	3.18	2.01
20	1.63	1.67	1.57	2.03	2.01	1.19	1.83	4.85	2.83	2.25	3.82	2.64
21	2.41	1.45	1.75	1.23	3.15	2.29	3.95	2.58	1.59	2.48	3.64	2.95
22	2.38	1.87	1.85	0.68	3.32	1.48	1.48	1.16	3.32	4.10	1.48	3.20
23	2.24	0.87	1.16	1.85	3.72	2.52	1.98	3.16	4.61	3.00	2.41	2.87
24	1.68	3.58	1.53	1.64	1.59	0.85	1.90	1.74	3.79	2.21	1.75	2.38
25	2.48	1.94	2.19	3.11	2.67	1.05	2.16	2.80	1.66	2.93	1.38	1.75
26	2.04	2.70	1.25	2.42	3.49	1.44	2.37	1.33	1.79	4.14	1.77	2.23
27	2.35	3.25	1.25	1.72	1.68	1.34	1.48	1.83	1.73	2.93	2.37	3.44
28	3.94	2.56	1.81	0.87	1.28	1.96	3.01	5.39	1.38	3.38	3.44	1.84
29	3.67	0.76	1.49	1.86	4.18	1.16	1.45	3.24	1.13	3.17	2.67	2.66
30	2.31	-	0.50	1.69	1.59	2.21	1.81	1.48	3.14	1.86	1.74	5.28
31	3.24	-	2.24	-	1.93	-	3.27	1.62	-	2.97	-	2.65

NOTE: 1916 values from Kesteven Asylum

TABLE IVa. 35-year daily totals of rainfall, (in inches), 1916-1950

Sandringham

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	4.40	2.09	1.63	1.49	1.43	2.22	1.99	3.57	4.32	2.90	4.95	2.19
2	3.49	2.06	1.57	3.22	1.40	3.28	1.36	4.33	3.16	1.43	3.45	3.53
3	2.61	3.95	.76	3.08	1.55	2.41	3.90	2.46	4.07	3.13	3.80	1.85
4	2.50	1.47	2.29	2.97	1.41	1.63	2.90	1.80	2.82	2.56	2.60	2.78
5	2.93	2.78	1.50	2.45	3.43	1.71	2.47	2.21	2.73	1.41	3.72	2.56
6	2.77	2.01	1.79	2.20	2.31	2.50	3.19	1.54	2.48	2.11	2.71	1.85
7	3.96	2.85	2.68	1.91	2.99	1.51	4.09	2.68	1.60	2.60	3.48	1.52
8	2.16	2.52	.94	1.78	1.55	1.22	2.56	5.41	1.10	3.48	3.30	2.77
9	3.05	2.79	2.21	2.78	1.65	1.43	3.11	3.00	2.36	3.54	3.40	2.59
10	3.16	2.50	2.06	2.79	1.69	2.75	2.94	3.50	1.36	2.10	3.03	2.18
11	3.31	1.95	2.02	2.09	2.28	2.11	2.02	1.91	1.95	2.95	4.49	2.69
12	2.62	3.20	2.09	2.01	2.39	2.64	2.51	2.87	3.32	3.45	2.96	1.71
13	1.79	1.51	1.94	2.11	1.27	4.05	2.04	1.72	3.06	1.25	3.54	2.28
14	3.06	1.90	2.00	2.17	1.75	2.62	2.68	2.19	3.80	2.12	1.77	2.63
15	2.80	1.55	1.98	3.77	1.47	2.33	7.30	1.91	2.19	1.53	2.53	1.53
16	1.86	2.80	2.15	3.37	2.52	1.67	3.38	.78	2.55	2.29	2.76	2.54
17	2.03	1.88	2.10	3.20	3.72	1.63	4.76	3.07	2.88	3.12	3.27	1.69
18	2.67	2.17	.62	3.17	1.92	4.49	4.18	2.80	2.47	2.38	4.73	2.52
19	2.88	1.91	2.16	2.55	2.36	3.04	2.86	2.43	3.01	2.71	2.93	2.02
20	1.95	2.41	1.38	2.18	1.81	2.11	1.95	3.93	3.27	3.46	3.55	1.29
21	2.13	1.47	2.09	1.29	1.48	1.86	3.74	2.56	1.83	3.59	4.19	4.41
22	2.83	2.31	2.08	1.31	3.63	1.78	2.78	2.95	3.33	3.74	2.15	3.89
23	2.70	1.79	1.45	2.34	5.91	1.16	3.37	3.47	2.92	3.72	3.03	2.67
24	2.11	2.91	1.44	1.94	2.91	2.62	1.99	4.16	4.11	2.87	2.94	1.96
25	3.34	2.53	2.73	3.24	3.68	1.47	2.63	1.79	2.60	3.23	2.03	2.74
26	2.83	3.35	1.31	2.25	3.39	1.87	2.12	1.89	2.80	4.20	3.03	3.21
27	1.99	2.73	1.94	2.21	2.11	2.00	3.74	1.54	3.35	3.57	2.65	2.55
28	4.05	2.92	1.67	1.37	1.58	2.90	3.29	4.47	2.00	4.29	3.89	3.42
29	3.34	.67	1.91	2.42	2.11	2.29	3.57	3.07	2.85	3.78	2.95	3.25
30	2.49	-	1.08	2.32	2.62	3.63	1.35	2.65	3.09	2.63	2.25	3.93
31	3.72	-	1.86	-	1.44	-	4.04	1.63	-	3.31	-	4.09

TABLE IVa 35-year totals of daily rainfall, (in inches), 1916-50

Wellingborough, Swanspool

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	4.06	2.09	1.22	2.82	1.91	1.66	1.76	3.69	2.24	1.54	4.66	2.93
2	2.34	2.87	1.15	2.81	1.52	2.06	1.63	2.11	3.02	1.36	4.54	1.61
3	2.60	2.79	1.15	3.17	2.50	1.03	2.36	2.24	3.54	2.27	3.13	0.99
4	1.69	1.43	3.25	3.17	1.43	1.16	2.54	2.42	1.98	1.71	1.68	3.04
5	1.85	3.51	2.12	2.57	3.96	1.98	3.14	2.82	1.64	1.48	3.75	2.41
6	2.44	2.52	1.98	1.83	3.36	1.52	2.86	4.54	2.09	1.15	3.06	1.67
7	3.04	3.14	2.63	2.17	1.38	2.80	3.67	3.33	1.01	2.06	2.48	2.26
8	1.64	1.63	0.89	1.94	0.86	2.30	1.23	3.96	1.57	3.06	2.10	2.34
9	2.60	1.87	1.54	2.09	2.21	2.36	4.21	2.75	1.88	2.71	3.03	2.37
10	3.19	1.33	2.40	3.49	1.77	2.50	4.05	1.78	0.97	2.35	2.02	1.63
11	2.75	1.32	1.65	1.84	2.13	1.66	1.96	0.98	1.47	1.77	3.84	2.31
12	2.03	2.75	2.05	1.52	2.10	3.19	1.79	4.26	3.25	2.93	1.31	1.19
13	1.40	1.17	2.21	2.28	0.84	3.42	3.70	1.38	1.82	2.12	2.93	2.35
14	2.45	1.47	1.99	1.64	1.60	1.54	4.09	2.35	4.74	2.16	3.03	3.30
15	2.58	1.48	2.64	2.92	2.25	1.01	4.38	1.72	2.30	2.36	2.80	2.39
16	1.68	2.41	2.28	2.09	2.28	1.48	2.09	1.71	2.37	3.47	3.84	1.75
17	1.42	1.73	1.79	2.13	1.67	0.53	3.79	2.09	1.90	3.83	2.16	0.95
18	3.23	2.02	0.87	2.68	1.95	3.86	2.41	1.30	3.26	2.16	4.52	2.14
19	2.57	1.67	2.63	2.22	2.21	1.78	1.54	3.11	3.47	3.15	2.75	1.98
20	2.49	2.07	1.08	2.13	3.85	1.77	2.08	3.56	3.15	2.93	3.23	1.17
21	2.30	1.50	1.56	1.51	4.23	2.78	2.13	3.66	1.91	3.38	2.88	3.49
22	2.06	2.27	1.80	0.91	1.87	1.59	1.36	2.09	4.14	3.56	2.47	3.69
23	1.95	1.33	1.16	1.87	4.93	1.21	1.58	3.29	3.79	3.75	2.42	2.51
24	2.00	2.25	1.19	1.28	2.37	0.82	0.71	2.04	3.63	2.59	2.53	2.15
25	3.39	3.14	1.89	2.64	3.01	1.22	2.74	2.33	1.58	3.48	1.45	3.08
26	3.29	2.15	0.98	2.03	2.50	1.88	2.95	1.18	1.32	3.07	2.11	3.04
27	2.81	2.51	1.97	2.50	1.52	1.76	2,97	2.40	2.54	2.45	2.82	3.02
28	4.43	2.00	2.00	2.09	1.93	1.93	2.59	3.65	1.18	1.91	3.09	2.39
29	3.77	0.62	1.12	1.51	3.07	1.07	1.25	3.66	2.64	3.10	2.63	2.69
30	2.19	-	0.89	2.56	1.56	2.35	2.16	2.89	2.60	2.07	1.89	4.62
31	3.80	-	2.30	-	1.84	-	2.75	1.35	-	4.73	-	2.70

Table IVb Rainfall totals in inches, divided by 35, thus giving 35-year means ranging from 'trace' to .70 in., for use with table IVa.

Total in inches x	35 yr means $\bar{X}/_{35}$		Totals in inches x	35 yr means $\bar{X}/_{35}$
- .17	'trace'		12.43 - 12.77	.36
.18 - .52	.01		12.78 - 13.12	.37
.53 - .87	.02		13.13 - 13.47	.38
.88 - 1.22	.03		13.48 - 13.82	.39
1.23 - 1.57	.04		13.83 - 14.17	.40
1.58 - 1.92	.05		14.18 - 14.52	.41
1.93 - 2.27	.06		14.53 - 14.87	.42
2.28 - 2.62	.07		14.88 - 15.22	.43
2.63 - 2.97	.08		15.23 - 15.57	.44
2.98 - 3.32	.09		15.58 - 15.92	.45
3.33 - 3.67	.10		15.93 - 16.27	.46
3.68 - 4.02	.11		16.28 - 16.62	.47
4.03 - 4.37	.12		16.63 - 16.97	.48
4.38 - 4.72	.13		16.98 - 17.32	.49
4.73 - 5.07	.14		17.33 - 17.67	.50
5.08 - 5.42	.15		17.68 - 18.02	.51
5.43 - 5.77	.16		18.03 - 18.37	.52
5.78 - 6.12	.17		18.38 - 18.72	.53
6.13 - 6.47	.18		18.73 - 19.07	.54
6.48 - 6.82	.19		19.08 - 19.42	.55
6.83 - 7.17	.20		19.43 - 19.77	.56
7.18 - 7.52	.21		19.78 - 20.12	.57
7.53 - 7.87	.22		20.13 - 20.47	.58
7.88 - 8.22	.23		20.48 - 20.82	.59
8.23 - 8.57	.24		20.83 - 21.17	.60
8.58 - 8.92	.25		21.18 - 21.52	.61
8.93 - 9.27	.26		21.53 - 21.87	.62
9.28 - 9.62	.27		21.88 - 22.22	.63
9.63 - 9.97	.28		22.23 - 22.57	.64
9.98 - 10.32	.29		22.58 - 22.92	.65
10.33 - 10.67	.30		22.93 - 23.27	.66
10.68 - 11.02	.31		23.28 - 23.62	.67
11.03 - 11.37	.32		23.63 - 23.97	.68
11.38 - 11.72	.33		23.98 - 24.32	.69
11.73 - 12.07	.34		24.33 - 24.67	.70
12.08 - 12.42	.35			

Table V Accumulated Frequencies of Daily Rainfall (in inches), 1916-1950

Cranwell

Daily Totals	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	All months
IV 2.50													
2.40							1						1
2.30							1						1
2.20							1						1
2.10							1						1
2.00					1		1	1					3
1.90					1		1	1					3
1.80					1		2	1					4
1.70					2		2	1		1		1	7
1.60					2		3	2		1		1	9
1.50					2		3	2		2		1	10
1.40					2		4	2		2	1	1	12
1.30					3		5	3	1	2	1	1	16
1.20		1			3	1	5	3	1	2	1	1	18
1.10		2			3	1	9	5	4	4	4	2	34
1.00		3	3		4	2	11	6	5	6	4	2	46
0.90	1	3	4	1	4	2	14	8	10	7	5	2	61
0.80	1	3	6	2	6	6	18	12	14	9	8	4	89
0.70	5	5	8	4	10	7	23	17	16	11	9	6	121
0.60	10	7	9	7	18	9	33	22	21	20	18	8	182
0.50	21	15	13	18	33	21	38	35	31	26	29	20	300
0.40	32	25	22	27	48	30	50	49	39	45	46	31	444
0.30	70	62	54	48	82	56	84	80	79	88	84	66	853
0.20	121	105	76	92	114	90	138	126	115	129	141	110	1357
0.10	293	209	183	231	221	212	242	239	234	249	284	253	2850
IV 0.005	651	558	508	524	467	449	506	491	481	583	646	632	6496
IV ≠ 0.004	434	431	577	526	618	601	579	594	569	502	404	453	6288
Total No. of days	1085	989	1085	1050	1085	1050	1085	1085	1050	1085	1050	1085	12784

≠ Including rainless days.

Table V. Accumulated Frequencies of Daily Rainfall, (in inches), 1916-1950

Sandringham

Daily Totals	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	All months
VI 2.50													
2.40													
2.30													
2.20													
2.10													
2.00													
1.90							1						1
1.80							1	1		1			3
1.70							1	1		1			3
1.60							1	1		1			3
1.50				1			2	2	1	1			7
1.40				1			2	2	2	2			9
1.30				1			5	3	2	2	1		14
1.20		1		1			6	4	4	2	1		19
1.10		1		1	1	1	6	5	4	2	2		23
1.00	1	1		1	3	2	9	6	5	3	3	1	35
0.90	2	1		1	5	5	15	11	5	5	5	1	56
0.80	5	1	1	2	8	6	18	18	7	8	6	2	82
0.70	8	3	5	2	15	9	26	21	14	13	9	4	129
0.60	12	8	11	4	19	15	34	28	22	21	15	9	198
0.50	21	15	14	10	25	25	50	36	35	36	27	13	307
0.40	36	32	19	34	36	45	65	62	57	52	57	31	526
0.30	70	57	42	63	75	66	93	93	94	92	105	69	919
0.20	144	103	85	132	124	117	150	134	134	150	158	141	1572
0.10	307	234	192	260	224	210	257	222	236	270	316	279	3007
IV 0.005	681	552	512	548	457	447	519	502	534	619	655	662	6688
* IV 0.004	404	437	573	502	628	603	566	583	516	466	395	423	6096
Total No. of days.	1085	989	1085	1050	1085	1050	1085	1085	1050	1085	1050	1085	12784

*Including rainless days.

Table V Accumulated Frequences of Daily Rainfall (in inches) 1916-1950 (continued).

Wellingborough, Swanspool

Daily Totals	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	All months
IV 3.00								1					1
2.50								1					1
2.40								1					1
2.30								1					1
2.20								1					1
2.10								1					1
2.00							1	1					2
1.90							1	1					2
1.80							1	2					3
1.70							1	2					3
1.60							1	2	1				4
1.50							2	2	1	1			6
1.40						1	2	3	1	2			9
1.30						1	2	3	1	2			9
1.20	1			1		1	2	5	1	3		1	15
1.10	3		1	1	2	1	2	6	3	3		1	23
1.00	3		2	1	3	3	5	6	4	5	1	2	35
0.90	5		3	2	8	4	9	13	7	8	3	3	65
0.80	6	3	4	5	11	8	13	16	10	11	7	4	98
0.70	10	5	7	7	13	9	19	20	12	17	13	7	139
0.60	14	9	9	10	23	12	26	22	19	23	20	16	203
0.50	23	12	15	16	33	18	37	34	29	31	31	24	303
0.40	39	28	27	31	47	26	51	51	51	50	49	42	492
0.30	75	49	48	55	67	45	78	83	77	80	93	63	813
0.20	138	93	84	114	122	93	128	131	116	133	148	116	1416
0.10	262	199	168	221	205	174	218	215	217	242	283	242	2646
IV 0.005	602	408	441	505	431	406	469	469	449	517	577	577	5923
H/ 0.004	483	509	544	545	654	644	616	616	601	568	473	508	6861
Total No. of days.	1085	989	1085	1050	1085	1050	1085	1085	1050	1085	1050	1085	12784

/ Including rainless days.

TABLE VI. Maximum and Minimum Monthly and Annual Totals of Rainfall (in inches), 1916-1950, with supplementary list covering extremes for the 50-year period, 1911-60

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Cranwell														
1916-50	Max.	1943 4.27	1923 3.49	1947 3.99	1920 4.35	1932 4.62	1946 3.98	1932 9.89	1941 3.65	1935 4.95	1924 4.47	1935 4.88	1938 4.13	1932 2 .83
	Min.	1932 0.70	1921 1943 0.37	1944 0.22	1938 0.16	1935 0.41	1925 0.13	1921 0.40	1947 0.13	1928 1940 0.49	1947 0.27	1945 0.44	1933 0.33	1921 17.08
Other extremes ≠ 1915-60	Max.	1960 4.42	1915 4.70	1915 4.20	-	-	1958 4.33	-	1956 4.92	-	1960 4.57	-	-	1960 30.84
	Min.	- -	1952 0.25	- -	- -	- -	- -	1952 0.22	- -	1959 0.09	- -	- -	- -	- -
Sandringham														
1916-50	Max.	1939 4.85	1950 3.98	1947 4.71	1935 3.55	1948 4.22	1927 4.42	1936 6.64	1917 5.75	1918 6.09	1924 4.77	1940 5.70	1929 4.53	1937 33.76
	Min.	1950 0.93	1929 0.61	1929 0.29	1938 0.68	1947 0.31	1940 0.34	1935 0.31	1947 0.03	1941 0.62	1947 0.32	1920 1.02	1932 0.75	1921 16.76
Other extremes 1911-60	Max.	- -	1958 4.08	- -	- -	- -	- -	- -	1912 8.36	- -	- -	- -	1914 5.10	1912 37.12
	Min	- -	1959 0.20	- -	1912 0.33	- -	- -	1911 0.28	- -	1959 0.13	- -	1955 0.27	1913 0.54	- -
Wellingborough														
1916-50	Max.	1939 5.27	1950 3.70	1947 4.74	1920 4.00	1932 4.39	1936 4.39	1936 7.88	1917 6.64	1918 4.77	1939 4.49	1940 5.80	1929 1934 4.20	1927 32.02
	Min.	1950 0.71	1932 0.25	1929 0.04	1938 0.07	1934 0.73	1925 0.02	1921 0.20	1947 0.00	1929 0.37	1947 0.19	1945 0.41	1926 0.47	1921 14.00

Continued

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Wellingborough con'd	Max.	-	-	-	-	-	1958	-	-	-	1960	-	1914	-
		-	-	-	-	-	5.87	-	-	-	4.51	-	4.59	-
Other extremes 1911-60		-	-	-	-	1959	-	1955	-	1959	-	-	-	-
	Min.	-	-	-	-	0.42	-	0.15	-	0.01	-	-	-	-

≠ 1911 to 1914 record not available Kesteven 1913-15, Cranwell 1917-60.

TABLE VII Maximum Daily Rainfall (in inches), 1916-50, with additional maxima for the 50-year period 1911-60.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
x Cranwell													
1916-50	Max.	1936	1916	1920	1944	1918	1946	1932	1944	1946	1921	1916	1948
		0.98	≠1.27	1.09	0.92	2.01	1.22	2.41	2.05	1.31	1.72	≠1.40	1.71
Other extremes 1913-60	Max.	1913	-	-	-	-	1952	-	-	1955	1913	-	-
		≠1.65	-	-	-	-	2.01	-	-	1.35	≠2.65	-	-
Sandringham 1916-50	Max.	1939	1946	1941	1918	1948	1929	1936	1917	1922	1941	1939	1925
		1.09	1.28	0.82	1.58	1.18	1.11	1.96	1.85	1.52	1.87	1.36	1.09
Other extremes 1911-60	Max.	1959	-	-	-	-	1911	-	1912	-	-	1915	1914
		1.34	-	-	-	-	1.78	-	2.91	-	-	1.93	1.32
Wellingborough						1930							
1916-50	Max.	1926	1926	1941	1918	1950	1936	1936	1922	1935	1924	1940	1927
		1.26	0.85	1.12	1.23	1.12	1.42	2.04	3.05	1.62	1.57	1.06	1.24
						1951							
Other extremes 1911-60	Max.	1959	1958	-	-	1952	1958	1914	-	-	-	1951	-
		1.27	0.96	-	-	1.12	1.81	1.70	-	-	-	1.09	-

≠ Taken from Kesteven Asylum.

x Based on 48 years record (1913-1960) Kesteven 1913-16, Cranwell 1917-60.

Appendix I

Intense falls of rain in 2 hours or less, 1860 - 1960
Extracted from British Rainfall.

(Arranged chronologically, in county order).

Key at end.

Year	Class	Station	Riv. Div.	Date	Amt. in.	D'r'n min.	Rate in/hr
Lincolnshire							
1871	N	Lincoln, Long Hills	3	Aug. 17	.95	30	1.90
1872	N	" , Branston Hall	3	July 6	1.32	120	.66
1874	N	Louth, Calcethorpe	3	Sept 24	.56	9	3.73
"	N	" "	3	" 24	.61	12	3.05
1878	R	Caistor	5	Aug. 7	.89	10	5.34
1880	N	Spilsby, Partney	4	" 6	1.29	50	1.55
"	N	Horncastle	3	July 29	1.49	105	.85
1883	R	" , Hemingby	3	June 30	1.86	120	.93
1887	N	Alford, The Burial Gd.	4	July 31	1.18	60	1.18
1896	N	Lincoln, Boutham	3	June 4	.85	25	2.04
1897	R	Grantham, Little Ponton Rec.	3	July 26	1.75	90	1.17
1899	N	Folkingham, Horbling	3	May 24	.75	12	3.75
1900	N	Navenby Rec.	3	Aug. 21	1.25	60	1.25
1901	R	Brigg	5	Oct. 3	1.86	60	1.86
1911	N	Spilsby, Ashby Rd.	4	Aug. 20	.95	30	1.90
1912	N	Claypole	3	June 19	.71	17	2.51
"	R	Horkstow	5	July 24	2.12	90	1.41
1913	VR	Crowland, Bank House	2	June 17	2.21	55	2.41
1915	R	Hagworthingham	4	July 4	1.25	30	2.50
"	R	Lincoln, Skellingthorpe Hall	3	June 30	2.50	105	1.43
1918	N	Thornton Curtis	5	July 11	.80	30	1.60
"	R	Brigg	5	May 17	2.36	90	1.57
"	R	Billingborough	3	" 17	2.10	90	1.40
1920	N	Hackthorn Hall	3	" 27	1.59	90	1.06
"	VR	Louth, Hallington	4	" 29	4.10	120	2.05
1922	N	Grimsby, Abbey Rd.	5	" 22	.77	15	3.08
1925	N	Anwick Vic.	3	" 19	1.01	30	2.02
"	N	Surfleet, School Ho.	2	" 19	.99	30	1.98
"	R	Boston, Fishtoft Sch.	3	" 19	1.70	60	1.70
1930	N	Brigg, Wrawby Rd.	5	June 18	.97	45	1.29
"	R	Anwick Vic.	3	" 18	1.53	50	1.84
1931	N	Brigg, Wrawby Rd.	5	July 12	1.00	60	1.00
"	N	East Krkby Manor	3	" 12	1.59	120	.79
1932	N	Horncastle	3	" 31	.78	25	1.87
"	VR	Cranwell Airfield	3	" 11	2.93	60	2.93
1934	N	" "	3	" 18	1.00	60	1.00
1936	N	Lincoln, Swallowbeck	3	" 9	1.25	60	1.25
1937	R	Leasingham Rec.	3	" 15	1.07	20	3.21
"	VR	Spalding Grammar Sch.	2	" 19	2.14	25	5.14
"	VR	" , Surveyor's Depot	2	" 19	2.14	30	4.28
"	R	Lincoln, Swallowbeck	3	" 15	1.70	30	3.40
"	N	Grantham, Central Sch.	3	" 15	1.44	60	1.44
"	N	Horncastle	3	" 15	1.61	105	.92
"	N	Cranwell Airfield	3	" 15	.81	12	4.05
1938	N	Horncastle	3	Aug. 5	.96	50	1.15

Year	Class	Station	Riv. Div.	Date	Amt. in.	D'r'n min.	Rate in/hr
1938	R	East Kirby Manor	3	Aug. 5	2.20	75	1.76
"	N	Cranwell Airfield	3	May 17	1.12	66	1.02
1939	R	Brigg, Wrawby Rd.	5	July 15	1.50	60	1.50
"	R	Gosberton, Quadring	2	" 20	2.01	65	1.86
"	N	Grantham, Central Sch.	3	Aug. 5	1.62	90	1.08
"	N	Horncastle	3	Sept. 2	1.31	90	.87
1940	R	Grantham, Central Sch.	3	July 10	1.60	60	1.60
"	N	Long Sutton, White Ho. Fm.	1	Aug. 14	1.07	60	1.07
"	R	East Kirkby Manor	3	July 10	2.14	105	1.22
"	N	Wold Newton Manor	4	" 10	1.70	120	.85
"	N	" " "	4	Apr. 27	1.33	120	.67
1943	VR	Ferriby Sluice	5	Sept.14	1.88	15	7.52
"	N	Boston, Haven Bank	3	July 8	1.22	95	.77
1947	R	" , Church Road P.S.	3	June 27	1.00	15	4.00
"	R	Wyberton, Slippery Gowt Fm.	3	June 27	1.50	60	1.50
1948	N	Wold Newton Manor	4	" 14	1.04	75	.83
"	N	Lincoln, Skellingthorpe Hall	3	" 14	1.60	90	1.07
"	N	Cranwell Airfield	3	" 14	.91	48	1.14
1955	N	" "	3	Sept.22	1.13	70	.97
"	N	Waddington Airfield	3	July 18	1.27	108	.71
1956	N	Wyberton, Slippery Gowt Fm.	3	June 28	1.06	65	.98
1958	R	Waddington Airfield	3	Aug. 10	1.26	38	1.99
"	R	Wold Newton Manor	4	" 20	2.13	120	1.07
"	N	Spalding, Surveyor's Depot	2	" 20	1.00	30	2.00
1960	N	Wyberton, Slippery Gowt Fm.	3	" 27	.75	20	2.25
"	VR	Revesby Res.	3	Oct. 7	4.11	110	2.24
Leicestershire							
1880	N	Market Harborough	2	June 23	1.00	30	2.00
1928	R	" " , Rose Hill	2	Aug. 12	1.49	60	1.49
1935	N	" " .	2	June 25	1.21	80	.91
1938	R	" " , Shrewsbury Ave	2	July 1	1.95	115	1.02
1945	N	Kibworth Harcourt	2	May 11	1.13	60	1.13
1951	N	" "	2	July 31	1.00	60	1.00
1952	N	Caldecott, Eyebrook Res.	2	Sept.10	1.03	75	.82
1953	R	Market Harborough, Grammar Sch	2	June 26	1.63	58	1.69
"	N	Caldecott, Eyebrook Res.	2	" 26	1.16	30	2.32
1954	N	Market Harborough, Nithsdale Ave.	2	Aug. 12	.76	20	2.28
Rutland							
1889	N	Ketton Hall, Stamford	1	May 23	1.01	60	1.01
1890	R	Little Casterton, Stamford	1	" 19	1.46	30	2.92
Northamptonshire							
1871	N	Northampton, Thorpelands	4	June 14	1.25	60	1.25
1878	N	" "	4	" 26	1.25	50	1.50
"	N	" "	4	Sept. 8	1.31	120	.65
1885	R	Peterborough, Springfield Ho.	4	July 12	1.00	15	4.00
1893	N	Maxey Vic.	5	" 11	1.05	22	2.86
"	VR	Apethorpe Lo.	4	" 3	2.47	60	2.47
1898	N	Addington Manor	4	Aug. 6	.95	40	1.43
1899	R	Oundle	4	" 15	1.63	30	3.26

Year	Class	Station	Riv. Div.	Date	Amt. in.	D'r'n min.	Rate in/hr
1905	N	Loddington	4	July 9	1.00	60	1.00
1908	N	Raunds	4	Aug. 28	.45	5	5.40
1910	N	Peterborough, Ashfield	4	June 8	1.09	60	1.09
1912	N	Cranford, Woodfood Ho.	4	July 23	.80	15	3.20
1914	N	Daventry, Sheaf St.	4	June 8	.93	20	2.79
1921	R	Peterborough, Milton Ho.	4	Aug. 11	1.91	65	1.76
1924	N	" , Abbeyfields	4	Sept. 5	1.04	30	2.08
1925	N	Sywell Hall	4	May 18	.85	30	1.70
1926	N	Wellingborough, Swanspool	4	" 21	.92	25	2.21
"	N	Sywell Hall	4	" 21	1.05	30	2.10
"	N	" "	4	Apr. 4	.79	30	1.58
1930	N	Northampton, Upton	4	June 18	1.00	20	3.00
1932	N	" , Mercers Row	4	July 13	1.00	30	2.00
"	N	Raunds, Day School	4	" 11	.90	30	1.80
1933	N	Peterborough, Abeyfields	4	June 25	1.79	120	.89
1934	R	Oundle, Nene Wharf	4	July 14	1.45	45	1.93
1935	R	Northampton, Upton	4	June 25	1.94	65	1.79
"	R	" , Mercers Row	4	" 25	1.88	120	.94
"	N	Gretton School	5	" 25	1.46	120	.73
1937	N	Blisworth, Grieff Ho.	4	" 15	1.10	30	2.20
1938	N	Oundle, Polebrook Hall	4	Aug. 9	.79	15	3.16
"	R	Peterborough, Westbourne Ho.	4	" 12	1.18	20	3.54
"	N	Blisworth, Crieff Ho.	4	" 12	.81	20	2.43
"	N	Peterborough, Sewage P. Sta.	4	" 12	1.04	45	1.39
1939	N	Blisworth, Crieff Ho.	4	July 21	1.07	40	1.61
"	N	" , Grand Junc, Canal	4	" 21	1.68	120	.84
1940	R	Northampton, Upton	4	" 10	1.34	25	3.22
"	N	" , Stimpson Ave.	4	June 8	1.17	30	2.34
1941	N	" , Upton	4	July 13	.53	7	4.54
"	N	" "	4	" 12	.58	10	3.48
"	R	Blisworth, Crieff Ho.	4	" 12	1.76	60	1.76
1942	N	Raunds, Madison	4	Aug. 30	1.08	50	1.30
1947	N	Lamport Grange	4	July 14	1.02	70	.87
"	N	Thrapston, Drayton Ho.	4	" 19	1.11	80	.83
1948	N	Wittering Airfield	4	June 14	.98	55	1.07
1952	R	Blisworth, Grand Union Canal	4	May 19	1.98	63	1.89
"	R	Gretton, Hillside	5	Sept. 10	2.25	120	1.13
1955	R	Northampton, Mercers Row	4	June 8	1.75	75	1.40
1957	N	Peterborough, Woodston	4	July 19	.80	30	1.60
Cambridgeshire							
1901	N	Elm, Grove Ho.	3	July 26	1.52	60	1.52
1902	N	Wisbech, Bank Ho	3	June 29	.90	30	1.80
1939	N	" , York Row	3	July 24	1.02	60	1.02
1942	N	" , Orchard Drive	3	Aug. 25	1.06	45	1.41
1945	R	Thorney, Bleak Ho.	3	" 5	1.51	35	2.59
1947	R	Wisbech, Queens Rd.	3	June 27	1.35	45	1.80
1954	N	Thorney Toll, Elm Tree Fm.	3	Aug. 21	1.05	45	1.40
"	N	" , Nutsgrove Fm.	3	" 21	1.10	90	.73
1959	N	Ponders Bridge P. Sta.	3	July 10	.71	10	4.26

Key N = Noteworthy
R = Remarkable
VR = Very Rare.

Lincolnshire 1 Nene
2 Welland
3 Witham and C
4 Great Eau and C
5 Humber, Rt. Bank, Tribs.

Leicestershire 2 Welland
3 Witham (none)

Rutland	1	Welland
	2	Witham (none)
Northamptonshire	4	Nene
	5	Welland
Bedfordshire	4	Nene (none)
Cambridgeshire	3	Nene
Huntingdonshire	2	Nene (none)
Norfolk	5	Nene (none)

Fig. 1 Average Monthly Rainfall as a percentage of Average Annual Rainfall 1916—50

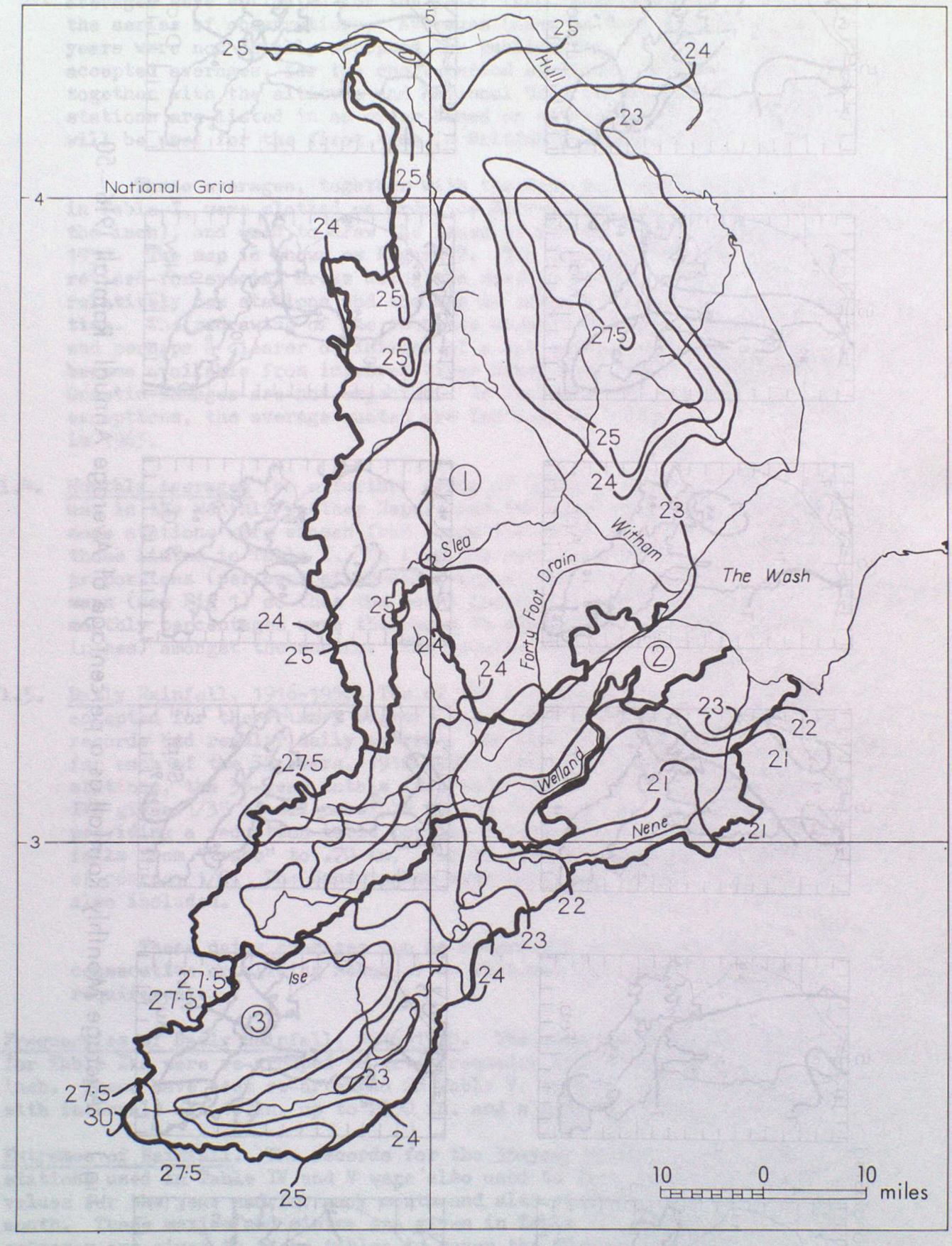

Fig 2 Average Annual Rainfall 1916—50, (in inches) over the River Board areas of

① Lincolnshire ② Welland ③ Nene